

REMARKS/ARGUMENTS

Claims 29, 33–45, and 81 are pending in the above-captioned application. All of these claims stand rejected. With this paper, Applicants have amended claims 29 and 81. No new matter was added with the amendments. Applicants thank the Examiner for his courtesy in conducting a telephone interview with the undersigned attorney on October 12, 2007, with regard to proposed amendments to claims 29 and 81. No agreement was reached.

I. Claim rejections under 35 U.S.C. § 103(a) as being unpatentable over Ho et al. (US 5,426,400)

Claims 35–45 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ho et al. (US 5,426,400). This rejection is traversed.

To warrant rejection under 35 U.S.C. § 103(a), all the claim limitations must be taught or suggested by the prior art. See MPEP § 2142.

With regard to amended independent claim 29, at a minimum, Ho et al. neither teach nor suggest a fabrication element comprising a body structure that includes two substrates. This limitation has been added to Applicants' claim 29 to more particularly point out and distinctly claim Applicants' invention. Support for a body structure including two (or more) substrates is provided throughout the specification, for example in FIGS. 1 and 8B and on page 8, lines 20–26.

The Examiner stated in the October 12, 2007, interview that limiting claim 29 to a body structure comprising two substrates would require a new search because the limitation had not been previously searched. Applicants respectfully point out that this limitation has been included in one or more claims of the claim set since it was added with Applicants' response of February 9, 2006, accompanied by a Request for Continued Examination. Therefore, the Examiner has had ample opportunity (and a duty) to perform such a search associated with any and all of the past four Office actions. Presumably the Examiner has done so.

Ho et al. teach a broadband coplanar waveguide to slotline transition for transferring radio frequency energy. *See* the Abstract. The waveguide to slotline transition of Ho et al. is composed of just one substrate. As illustrated in FIGS. 3 and 5, the device includes open channels **58**, **60**, and **70**. As described in column 3, lines 29–42, these open channels are

formed by etching away sections of an electrically conductive layer, e.g., copper, aluminum, electrically conducting polymers, or superconductive metals (column 3, lines 29–33) “formed on” (column 3, line 30) a surface of a dielectric substrate. One skilled in the art would recognize that such layers are formed on a substrate using standard integrated circuit deposition techniques.

Furthermore, as seen in all of the figures of Ho et al., the channels are *not* covered. The Examiner has stated in the current Office action, beginning at the bottom of page 2, that “the waveguide as disclosed by Ho et al. may be incorporated with the internal housing structures of various electrical devices thereby being considered ‘covered’ as claimed.” Applicants wish to point out that the Examiner’s interpretation assumes structures that are not disclosed by Ho et al. and are not integral to the patented device. The fabrication element as taught by Ho et al. is not covered, and no advantage would be gained by fabricating a broadband coplanar waveguide to slotline transition such as is taught by Ho et al. that is, in and of itself, covered. Nonetheless, in the interests of furthering prosecution, Applicants have amended their claim to specify that their claimed microchannel network is “disposed within the body structure such that the microchannel network is covered by at least one of the two substrates.” Applicants had in their June 25, 2007, response limited claim 29 to a covered microchannel network to more particularly point out and distinctly claim Applicants’ invention. Applicants are now providing added specificity for the term “covered.” As previously pointed out, support for a covered microchannel network can be found, for example, on page 15, lines 14–19, and on page 16, lines 32 and 33, as well as being illustrated in FIGS. 1 and 8B. That the microchannel network is covered by at least one of the two substrates is supported throughout the specification, for example being illustrated in FIGS. 1 and 8B and described on page 12, lines 1–21. Thus, no new matter has been added by the amendment of the claim. Ho et al. do not teach or suggest such a fabrication element, and simply placing the waveguide of Ho et al. in a housing of a completely independent device or system would not produce a waveguide/housing combination that meets Applicants’ claimed limitations.

With regard to amended independent claim 81, at a minimum, Ho et al. neither teach nor suggest a fabrication element comprising a body structure formed by bonding together at least a first and a second substrate. Neither do they teach a channel network that is disposed within such a body structure. Nonetheless, in the interests of furthering prosecution, Applicants

have amended their claim to specify that their venting channel network is disposed within the body structure “at the interface of the first and second substrates.” That the venting channel network of claim 81 is disposed at the interface of the two substrates is supported, for example, by FIGS. 2A, 2B, and 8A and by the fact that the channels are formed, as described throughout the specification, into one or both of the substrates that form a fabrication element. The substrates are then bonded together with the channels within the device; i.e., between the bonded substrates. *See*, for example, the discussion on page 12, lines 1–21.

The Examiner has not demonstrated either in the present Office action or in the Office action of February 23, 2007, that Applicants’ claim 81 is unpatentable over Ho et al. As discussed in Applicants’ June 25, 2007, response, claim 81 was listed as being rejected on the Office Action Summary of the February 23, 2007, Office action, but no support for this rejection was given within the body of the Office action. No support is given in the present Office action, either. The Examiner has simply stated on page 3 that the term “within,” which was added to claim 81 with Applicants’ June 25, 2007, response, “does not translate into meaning the entire structure/element is located within the body structure....” Applicants do not understand how their claimed channel network, or the channels of Ho et al., could be interpreted as having a portion disposed outside the body structure. Nevertheless, in the interests of advancing prosecution, Applicants have attempted to address this remark by making the above-described amendment, which clearly specifies the location of their claimed venting channel network.

As previously demonstrated, Ho et al. neither teach nor suggest a fabrication element comprising two substrates. The waveguide to slotline transition of Ho et al. is composed of just one substrate. The channels of Ho et al. are formed in the surface of the waveguide and are not within a body structure “formed by bonding together at least a first and a second substrate.” Furthermore, the waveguide channels are not disposed at the interface of two substrates but are, rather, etched into a layer formed onto a single substrate.

Therefore, the Ho et al. reference neither teaches nor suggests all of the limitations of Applicants’ amended independent claims 29 and 81. Withdrawal of the rejection of these claims as being unpatentable over Ho et al. is, therefore, respectfully requested.

Claims 33–45 depend directly or indirectly from amended independent claim 29. Any claim depending from a nonobvious claim is also nonobvious. *See* MPEP § 2143.03 and

In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Therefore, dependent claims 33–45 are nonobvious. Withdrawal of the rejection of these claims as being unpatentable over Ho et al. is, therefore, respectfully requested.

Further, to warrant rejection under 35 U.S.C. § 103(a), analogous art must be presented. “To rely on a reference under 35 U.S.C. 103, it must be analogous prior art.” MPEP 2141.01(a). Applicants respectfully assert that the patent to Ho et al. is not analogous art. The broadband coplanar waveguide to slotline transition of Ho et al. falls into class 333. Applicants’ body structures including a venting channel or venting channel network have been assigned to class 422. Further, the invention of Ho et al. and Applicants’ claimed inventions are entirely different and serve entirely different functions. “While Patent Office classification of references and the cross-references in the official search notes of the class definitions are some evidence of ‘nonanalogy’ or ‘analogy’ respectively, the court has found ‘the similarities and differences in structure and function of the inventions to carry far greater weight.’” MPEP 2141.01(a) and *In re Ellis*, 476 F.2d 1370, 1372, 177 USPQ 527, 527 (CCPA 1973). Ho et al. teach a broadband coplanar waveguide comprising a single substrate. Applicants claim body structures comprising at least two substrates that contain a venting channel or channel network. Thus, not only do Ho et al. teach structures that are different from those of Applicants’ claimed inventions, but the functions of the structures are different as well.

“When applying 35 U.S.C. 103, the following tenets of patent law must be adhered to: (A) The claimed invention must be considered as a whole; (B) The references must be considered as a whole....” MPEP 2141(II). Applicants’ claimed embodiments, taken as a whole, relate to eliminating bond voids. The invention of Ho et al., taken as a whole, relates to transferring radio frequency energy using an integrated circuit in the form of a broadband coplanar waveguide to slotline transition. A person of ordinary skill faced with the problem of bond voids between bonded substrates would not look to the teachings of Ho et al. for a solution to their problem. Not only does Ho et al. not consider the problem of bond voids, Ho et al. does not teach a fabrication element that involves bonding. The integrated circuit of Ho et al. is made by forming an electrically conductive layer on top of a single substrate, which is known by those of skill in the art to be accomplished using standard integrated circuit deposition techniques (e.g., sputtering, spinning, vapor deposition).

Conclusion

For the foregoing reasons, Applicants believe all the pending claims are in condition for allowance and should be passed to issue. If the Examiner feels that a telephone conference would in any way expedite the prosecution of the application, please do not hesitate to call the undersigned attorney.

Respectfully submitted,



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